

## **Amendments to the Specification**

Please amend the paragraph extending from page 1, line 4 to page 2, line 26 as follows:

The present invention is related to the following applications entitled “Method and Apparatus for Counting Instruction Execution and Data Accesses”, serial no. 10/675,777 [[\_\_\_\_\_]], attorney docket no. AUS920030477US1, filed on September 30, 2003; “Method and Apparatus for Selectively Counting Instructions and Data Accesses”, serial no. 10/674,604 [[\_\_\_\_\_]], attorney docket no. AUS920030478US1, filed on September 30, 2003; “Method and Apparatus for Generating Interrupts Upon Execution of Marked Instructions and Upon Access to Marked Memory Locations”, serial no. 10/675,831 [[\_\_\_\_\_]], attorney docket no. AUS920030479US1, filed on September 30, 2003; “Method and Apparatus for Counting Data Accesses and Instruction Executions that Exceed a Threshold”, serial no. 10/675,778 [[\_\_\_\_\_]], attorney docket no. AUS920030480US1, filed on September 30, 2003; “Method and Apparatus for Counting Execution of Specific Instructions and Accesses to Specific Data Locations”, serial no. 10/675,776 [[\_\_\_\_\_]], attorney docket no. AUS920030481US1, filed on September 30, 2003; “Method and Apparatus for Debug Support for Individual Instructions and Memory Locations”, serial no. 10/675,751 [[\_\_\_\_\_]], attorney docket no. AUS920030482US1, filed on September 30, 2003; “Method and Apparatus to Autonomically Select Instructions for Selective Counting”, serial no. 10/675,721 [[\_\_\_\_\_]], attorney docket no. AUS920030483US1, filed on September 30, 2003; “Method and Apparatus to Autonomically Count Instruction Execution for Applications”, serial no. 10/674,642 [[\_\_\_\_\_]], attorney docket no. AUS920030484US1, filed on September 30, 2003; “Method and Apparatus to Autonomically Take an Exception on Specified Instructions”, serial no. 10/674,606 [[\_\_\_\_\_]], attorney docket no. AUS920030485US1, filed on September 30, 2003; “Method and Apparatus to Autonomically Profile Applications”, serial no. 10/675,783 [[\_\_\_\_\_]], attorney docket no. AUS920030486US1, filed on September 30, 2003; “Method and Apparatus for Counting Instruction and Memory Location Ranges”, serial no. 10/675,872 [[\_\_\_\_\_]], attorney docket no. AUS920030487US1, filed on September 30, 2003; “Method and Apparatus For Maintaining Performance Monitoring Structure in a Page Table For Use in Monitoring Performance of a Computer Program”, serial no. 10/757,250 [[\_\_\_\_\_]], attorney docket no. AUS920030488US1, filed on January 14, 2004; “Autonomic Method and Apparatus for Counting Branch Instructions to Improve Branch Predictions”, serial no. 10/757,237 [[\_\_\_\_\_]], attorney docket no. AUS920030550US1, filed on January 14, 2004; and “Autonomic Method and Apparatus for Local Program Code Reorganization Using Branch Count Per Instruction Hardware”, serial

no. 10/757,156 [[\_\_\_\_\_]], attorney docket no. AUS920030552US1, filed on January 14, 2004. All of the above related applications are assigned to the same assignee, and incorporated herein by reference.

Please amend the paragraph extending from page 29, line 19 to page 30, line 10 as follows:

The processor may utilize this metadata in any of the three ways described earlier, for example, via a 'shadow cache'. The processor detects the performance instrumentation segment linked to the text segment at the time that instructions are loaded into the instruction cache. At instruction load time, the processor also loads the corresponding performance metadata into its shadow cache. Then, as an instruction is executed out of the instruction cache, the processor may detect the existence of a metadata word in the shadow cache, mapped to the instruction it is executing. The format of the data in the shadow cache is very similar to the format of the data in Figure 3 with a series of entries correlating the metadata word 312 with the instruction in the instruction cache. The preferred means of associating the metadata with the instruction using a performance instrumentation shadow cache are described in related U.S Patent Application "Method and Apparatus for Counting Execution of Specific Instructions and Accesses to Specific Data Locations", serial no. 10/675,776 [[\_\_\_\_\_]], attorney docket no. AUS920030481US1, filed on September 30, 2003, which is incorporated above.